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(30) Priority: 07-08-92 FR 9208475	(72) Inventor: Mostafa Beniafkih, 3, allée de l'Aude, Hermitage, Casablanca, (MA)
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(84) Designated contracting States: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE	(74) Attorney: Phélip, Bruno et al, c/o Cabinet Harié & Phélip, 21, rue de la Rochefoucauld, F-75009 Paris (FR)
(71) Applicant: Mostafa Beniafkih, 3, allée de l'Aude, Hermitage, Casablanca, (MA)	

(54) **Device for paperless dissemination of information.**

(57) The invention concerns a device for the paperless dissemination of information to users, for example to the general public, comprising:

- computerized means for composing (11,13) documents (71) having information,
- automatic machines or computerized means for distributing (21, 23) the documents (71),
- portable computerized means with foldable screen for displaying (7) the documents (71),
- telecommunications links (81) connecting the computerized means of composition (11, 13) to the computerized means of distribution (21, 23).

The means of distribution (21-23 [sic]) are accessible to numerous users and allow the copying of documents onto an information storage medium (76) readable by display means (7) in exchange for payment by the user.

[see original for diagram] FIG. 2

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The present invention concerns a device for the paperless distribution of information to users, for example to the general public. It makes it possible, for example, to distribute press editions without paper. It is composed of a set of electronic means that allow the distribution of newspapers, magazines, articles or various documents without the need for a paper medium.

Indeed, the use of the paper medium for distribution of the press, magazines or books has a number of disadvantages that the invention can avoid.

In particular, although printing has recently been considerably modernized, it constitutes a burdensome operation requiring the storage and use of a large amount of paper.

This paper must then be distributed, that is, transported by road, train, plane, etc., which is costly and can result in delays. Documents that are not purchased by the end user must be returned to the publisher.

This transportation also creates delays between the time of the page makeup of the document and the time it is actually available to the consumer or end user.

Once they have been read, simply newspapers fill up wastebaskets.

Doing away with paper media makes respect for the ecology possible by avoiding the destruction of forests, by limiting the use of polluting means of transport, and by avoiding the disposal of the corresponding waste.

EP-A-0390611 describes an electronic book that can be fed by diskette, by a telephone line, or by a radio link.

However, this document does not describe any system or device for disseminating information to users that would allow the distribution of newspapers, magazines, articles or miscellaneous documents but not require a paper medium.

Moreover, electronic information dissemination devices are known, for example in the form of a server to which terminals are connected.

From these terminals, for example, users can access a number of documents stored in the server's memory. This type of device requires the installation of a full telecommunications link between each terminal and the server. The terminals are cumbersome and costly devices that generally include a keyboard. Because of this, their use is limited.

Billing for the server's services usually requires a subscription by which the user can be identified.

US-4,674,055 concerns a software distribution device. This device includes a server containing the software available to the customers, as well as points of sale connected by telephone lines to the server.

When a customer wishes to purchase a computer program, he chooses one at the point of sale. After paying the sale price of the chosen program, this program is transmitted from the server to the point of sale and copied onto a medium, i.e., a cassette or a diskette. The customer then receives this medium and can subsequently use it to play a game, for example. However, there is no access to the detailed information contained on this medium.

The US-4,674,055 document does not reveal any means of obtaining knowledge of unique information contained in newspapers, magazines, articles or miscellaneous documents. In particular, the document does not reveal any possibility of obtaining knowledge of such information without having to have a diskette or cassette.

In order to remedy the disadvantages enumerated above, the invention concerns a device for disseminating information to users.

This device comprises computerized means for composing documents having the information, computerized means of distributing documents, portable computerized means for displaying documents and telecommunications links connecting the computerized means of composition to the computerized means of distribution.

According to the invention, the distribution means are accessible to numerous users and allow the copying of documents onto an information storage medium that is readable by display means in exchange for payment by the users.

The invention makes available to users a network for the paperless distribution or dissemination of information, which network includes an electronic book and automatic machines connected to an information center composed of computerized means of composing documents having the information.

This system allows the public to have simple, direct access to the information and publications.

In one preferred form of embodiment, the distribution means are terminals having a modem, means of obtaining the payment, a screen for dialog with the users, and means for copying documents onto the information storage medium.

Preferably, each of the computerized means of display has at least one microprocessor, a read-only memory, a random access memory, a flat screen, and a reader of the information storage medium. Said means have one folded state in which they are pocket-size, and an unfolded large format state.

The information storage medium is appropriately an EPROM memory, and payment can be made either by coins or banknotes, or by credit card, or by subscription and posting to the respective account.

The computerized composition means appropriately have several microcomputers or terminals connected to a central computer.

Preferably, the telecommunications links have a front end processor connected by modems and communication lines to the distribution means.

The distribution means appropriately have an output by which they can be locally connected to a terminal for purposes of programming, routine maintenance or corrective maintenance.

A particular form of embodiment of the invention will be described below, with reference to the attached drawings in which:

- Figure 1 is a diagrammatical representation of a distribution means of information;
- Figure 2 is a general diagrammatical representation of the information dissemination device according to the invention;
- Figure 3 is a diagrammatical representation of the central site of the information dissemination device;
- Figure 4 is a diagrammatical representation of the portable computerized means for displaying documents.

The device for disseminating information to users has three groups of means or levels represented in figure 2.

The central site 1 makes it possible to compose the documents 71 intended for the users, and to disseminate them to the distributor sites 21 to 23. This is the first level.

This dissemination is done by telecommunications lines 81-83.

The set of computerized distribution means 21 to 23 form the second level, through which the end user can be supplied in order to have the documents he wishes to be able to consult. The distribution means 21-23 are the automatic machines or kiosks, by means of which the general public can obtain the information or publications they need.

To that end, each user has a portable computerized means for displaying documents 71, which form the third level.

The computerized means of distribution 21-23 of documents 71 are placed in distributor sites that are accessible to the users.

When a user wishes to have a document 71, for example a newspaper, a magazine, etc., he goes to the distributor site where the distribution means 21-23 have means that allow one of the available documents to be selected and copied onto an information storage medium 76 that is readable by the end user's display means 7.

This copy is made in exchange for a respective payment made by the user.

Documents intended for the user are prepared at the central site, represented in Figure 3, using terminals 13 that are connected by a local network to a central unit 41.

The terminals 13 have all the means available for preparation of documents, such as microcomputers equipped with different software programs for word processing, graphics, page makeup, etc., various readers allowing the input of documents that are already available on magnetic media, or storage compatible with the computer systems, scanners, etc.

The central unit 41 has all of the peripherals 42 to 46 that are normally available at computer sites, as well as a console 47 used to verify its own operation.

After the documents 71 have been prepared at the terminals 13, they are transferred via the central unit 41 to one of the storage means, for example the storage device 42.

The central computer 11 is connected to a front end processor 12, which is made up of a central unit 51 and peripherals 52 to 54, which enables the central computer 11 to be connected to the telecommunications networks 81 to 83 by the set of modems 14, 61 to 63.

The distribution means 21-23 are connected by the lines 81 to 83 to the central unit 41.

Figure 1 represents one of these distribution means, which here is in the form of a terminal 31. This terminal has a screen 33, for example a touch screen, which allows both the display of information 34 and the entry, by the user, of information, for example to select the desired document.

These distribution means preferably have a modem, means of acquiring 35, 36 the payment from the user, and means 37 of copying the documents 7 onto an information storage medium 76.

Payment by the user can be made by coins or banknotes, credit card or by subscription.

Preferably each of the distribution means 21-23 allows the payment by any one of these means, and thus has devices for recognizing and counting coins or banknotes, reading credit cards, acquiring a subscription number, etc.

The portable computerized means 7 of displaying the documents 71 are represented in Figure 4. They are preferably foldable and can have at least two screens 74 and 75 that form a whole when they are opened.

Thus, when folded they can have a smaller "pocket-size" format, and when unfolded, a larger format allowing documents to be read easily. It is not necessary for them to have a keyboard, and they generally do not have one.

They preferably have a touch screen on at least one of their pages 71, so that in a window 73 the position can be displayed of the pages 74 and 75 in the document 71 as a whole.

Advantageously, a window 72 is provided to display the summary of the respective page.

Of course, the windows 73 and 72 are appropriately obtained by controlling the software in the page 75.

Means 77 make it possible to read the information storage medium 76 by the information display means 7.

An appropriate device 78 is provided for turning [it] on.

The general operation of the information dissemination device is therefore as follows.

The documents are prepared or collected at the central site where they are placed in memory. These documents are then accessible from computerized distribution means 21 to 23.

According to different forms of embodiment, it may be preferred to have a local storage in the distributor sites, in order to make the documents available without having to use the telecommunications lines 81 and 83 at the time the request is made. The updating or replacement of the documents is done by the telecommunications line.

In other forms of embodiment, or for documents that are requested infrequently, the storage is only done at the central site and the telecommunications link will be established between the distribution means and the central site at the time the user makes the request.

The user has at least a computerized portable display means 7 equipped with an information storage medium 76.

When he goes to one of the distribution means or automatic machines 21-23, a menu asks him to connect his information storage medium 76 to the means 37 of the distribution means 21-23.

Then, after consulting a set of menus and selections, or selection by keyword, etc., he is asked to choose the document he wishes to access.

The price of the document is then displayed and the user is requested to proceed with the payment.

The user responds by giving his subscriber number, or by inserting the coins, banknotes or his credit card.

The distribution means then select the requested document and make a copy thereof onto the information storage medium 76.

The information storage medium 76 can either be detachable from the display means 7, or can remain integral therewith and all of these display means can be connected to the distributor means 21-23 during the transfer.

The information storage medium 76 is advantageously an EPROM.

The central computer 11 also allows the administrative management of the system as a whole, including operations such as billing, archiving, etc.

It also provides the management of the local network.

This information dissemination device is therefore economical and only employs reusable components.

It allows the simple, effective consultation of documents transferred onto the information storage medium, and it will benefit from all of the improvements that will be progressively made to the computer systems.

The sole purpose of the reference signs inserted after the technical characteristics mentioned in the claims is to facilitate comprehension of the claims, and they in no way limit the scope thereof.

Claims

1. Device for the dissemination of information to users, comprising:
 - computerized means for composing (11,13) documents (71) having information,
 - computerized means for distributing (21, 23) documents (71),
 - portable computerized means for displaying (7) the documents (71),
 - telecommunications links (81) connecting the computerized means of composition (11, 13) to the computerized means of distribution (21, 23).characterized in that the means of distribution (21-23 [sic]) are accessible to numerous users and allow the copying of documents onto an information storage medium (76) readable by display means (7) in exchange for payment by the user.
2. Information dissemination device according to claim 1, characterized in that the distribution means (3) are terminals having a modem, means of obtaining the payment (35, 36), a screen (33) for dialog with the users, and means (37) for copying documents (7) onto the information storage medium (76).
3. Information dissemination device according to either claim 1 or claim 2, characterized in that the computerized means of display (7) have at least one microprocessor, a read-only memory, a random access memory, a flat screen, and a reader (77) of the information storage medium (76), in that they have one folded state in which they are pocket-size, and an unfolded large format state.

4. Information dissemination device according to any of claims 1 to 3, characterized in that the information storage medium (76) is an EPROM memory.
5. Information dissemination device according to any of claims 2 to 4, characterized in that payment is made by coins or banknotes.
6. Information dissemination device according to any of claims 2 to 4, characterized in that payment is made by credit card.
7. Information dissemination device according to any of claims 2 to 4, characterized in that payment is made by subscription.
8. Information dissemination device according to any of claims 1 to 7, characterized in that the computerized composition means (11, 13) have several microcomputers or terminals (13) connected to a central computer (11).
9. Information dissemination device according to any of claims 1 to 8, characterized in that the telecommunications links (8) have a front end processor (12) connected by modems (14) and communication lines to the distribution means (3).
10. Information dissemination device according to any of claims 1 to 9, characterized in that the distribution means (3) have an output which can be locally connected to a terminal (9) for purposes of programming, routine maintenance or corrective maintenance.

FIG. 1

FIG. 2

[see original for diagrams]

FIG. 3

[see original for diagram]

FIG. 4

[see original for diagram]

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EUROPEAN SEARCH REPORT

Application Number
EP 93 40 1763

DOCUMENTS CONSIDERED TO BE PERTINENT		Claims concerned from the examined application	CLASSIFICATION OF THE APPLICATION (Int. Cl. 5)
Category	Citation of the document with indication, if needed, of the pertinent parties		
D, Y	EP-A-0 390 611 (HIUKA SANGYO) * abstract; claims; figures * * page 5, line 16-line 38 *	1-3	G07F17/16 G06F15/02
D, Y	US-A-4 674 055 (H. OGAKI) * abstract; figures 1-4 *	1-3	
A	* column 1, line 30 – column 2, line 68 * * column 12, line 55 – column 13, line 19 *	5, 6, 9	
X, P	EP-A-0 [illegible] 630 (FUJITSU) 7 April 1993 * abstract; claims; figures 1-3, 19 * * column 8, line 1 – column 10, line 43 * * column 15, line 27 – column 23, line 28 *	1, 2, 5-7, 9	
A	FR-A-2 [illegible] 187 (TECHNICATOME)		<div>TECHNICAL DOMAINS SEARCHED (Int. Cl.5)</div> G07F G06F
A	US-A-4 787 050 (T. SUZUKI)		
This report was drawn up for all claims.			
Place where search was made THE HAGUE		Date of Completion of Search 12 October 1993	Examiner J. David
CATEGORY OF DOCUMENTS CITED X: particularly pertinent by itself Y: particularly pertinent in combination with another document of the same category A: technological background P: interim document		D: cited in the application	